

What is claimed is:

Sub A. 1. In a plate for providing a fluid seal between two port faces, the plate including an opening having a boundary and an annular seal disposed within the boundary of the opening,

the improvement comprising a support ring disposed within the annular seal.

2. The improvement of Claim 1, wherein the annular seal comprises a flexible O-ring, and wherein the support ring comprises a metal ring.

3. The improvement of Claim 1, wherein the support ring has an outer boundary which faces an inner border of the annular seal, and wherein the support ring is chamfered on said outer boundary.

4. The improvement of Claim 3, wherein the support ring has two chamfers, both chamfers making an angle of about 45° with an axis of the support ring.

5. The improvement of Claim 1, wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal.

6. The improvement of Claim 3, wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal.

7. A plate for providing a fluid seal between two port faces, comprising:

- a) an opening formed in the plate, the opening having a boundary,
- b) an annular seal disposed within the boundary of the opening, and
- c) a support ring disposed within the annular seal.

8. The plate of Claim 7, wherein the support ring has an outside diameter which is greater than an inside diameter of the annular seal.

9. The plate of Claim 7, wherein the support ring has an outer boundary which faces an inner border of the annular seal, and wherein the support ring is chamfered on said outer boundary.

10. The plate of Claim 9, wherein the support ring has two chamfers, both chamfers making an angle of about 45° with an axis of the support ring.

11. The plate of Claim 7, wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal.

12. The improvement of Claim 10, wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal.

Sub A2 > 13. In a blanking plate, the blanking plate comprising means for blocking fluid flow in a conduit,

the improvement wherein the blanking plate includes a domed portion, the domed portion defining a surface which is convex in a direction of the conduit to be blocked.

14. The improvement of Claim 13, wherein the domed portion extends across a generally circular region which matches a port to be blocked.

15. The improvement of Claim 13, wherein the domed portion transitions smoothly from a flat surface of the blanking plate to an apex of the domed portion.

16. In an orifice plate, the orifice plate including means for attachment of the orifice plate to a fluid handling device,

the improvement wherein the orifice plate includes a domed portion, the domed portion defining a surface which is convex in a direction of the conduit to be blocked, and wherein the domed portion includes an orifice.

17. The improvement of Claim 16, wherein the domed portion defines a

central region, and wherein the orifice is located in the central region of the domed portion.

18. The improvement of Claim 16, wherein the domed portion transitions smoothly from a flat surface of the blanking plate to an apex of the domed portion.

19. In a sealing plate, the sealing plate comprising an interface between a fluid port and a fluid handling component,

the improvement wherein the sealing plate defines a central bore, and wherein the central bore transitions from a larger diameter portion to a smaller diameter portion, and wherein the sealing plate comprises a structural support for the fluid handling component.

20. The improvement of Claim 19, wherein the fluid handling component has a port diameter, and wherein the diameter of the smaller diameter portion of the central bore of the sealing plate generally equals the port diameter.

21. The improvement of Claim 19, wherein the fluid handling component includes at least one seal, and wherein the smaller diameter portion of the central bore is smaller than a diameter of said at least one seal.

22. The improvement of Claim 19, wherein the sealing plate includes at least one face seal.

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